



Alpha Magnetic Spectrometer
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Alpha Magnetic Spectrometer Weekly Reports

August 13, 2004



National Aeronautics and
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Upcoming Events:

- Thermal Control System (TCS) Delta Critical Design Review (Δ CDR) - October 18 - 19, 2004 – JSC
- AMS General TIM - October 20 - 22, 2004 – JSC
- STA Vacuum Case Delivery (on dock at STADCO) - October 13, 2004
- Flight Vacuum Case Delivery (on dock at STADCO) - December 11, 2004
- AMS General TIM - January 10 - 14, 2005 – KSC
- AMS-02 Avionics Functional Interface Test (FIT) - January 2005
- Tracker Thermal Control System (TTCS) PDR - January 2005, CDR - April 2005
- AMS-02 Phase II Safety Review - March 2005 - JSC

Upcoming Tests:

- O-Ring Test Fixture (OTF) Vacuum Test - On going - J13
- Interface Plate Static Test - Date TBD - Location TBD
- Lower Joint Static Test - Date TBD - Location TBD
- STA Acoustic Test - Date TBD - ESTEC - Noordwijk, Netherlands (Schedule under review)
- STA Sine Sweep Test - Date TBD - INFN - Terni, Italy (Schedule under review)
- Full Assembly Modal & Static Tests - Date TBD - IABG - Munich, Germany

Status:

- Lockheed Martin (LM) Alpha Magnetic Spectrometer (AMS) personnel conducted a meeting with representatives of the JSC Safety & Mission Assurance Directorate (NA), Space Shuttle Division (NC) Payload Safety, and Flight Equipment Division (NT) Government Furnish Equipment (GFE) Branch to discuss plans for developing the AMS-02 Master Verification Plan (MVP). NT personnel took the action to review the column headings from the verification matrix in the Verification and



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Validation Document (V&VD) template from Work Instruction 023 (EA-WI-023) and determine their applicability for use in the MVP. The action was completed and LM AMS team members concurred with the recommendations of NT.

- A Nonconformance Report (NCR) written against one of the Vacuum Case Outer Cylinders was received from STADCO. The NCR documents a machining error on one of the circumferential ribs of the Outer Cylinder that caused the rib to be cut too narrow. The error was reported to have been caused by a machine tool problem. The LM Stress Group performed a structural evaluation of areas of the cylinder adjacent to the nonconforming rib and determined that margins of safety are positive, hence the Outer Cylinder can be used as-is.
- The aluminum material for the Unique Support Structure - 02 (USS-02) Upper and Lower Trunnion Bridge Beams and Lower Angle Beams was changed from 7050-T74511 to 7075-T73511. The benefits of this change include a higher resistance to stress corrosion cracking and a better raw stock availability for the manufacturer of the extrusions.
- The rivet list for the USS-02 was updated and forwarded to the Stress Group for verification and approval. Some minor discrepancies were noted by Stress. Resolutions to the discrepancies are being investigated. Updates to the fastener lists for the USS-02 and the Primary Support Stand are in work.
- Drawings for the AMS-02 Payload Integration Hardware (PIH) Interface Control Document (ICD) were updated and exported to PowerPoint for integration into Revision A of the ICD.
- Members of the LM AMS Project Team met with personnel from Rothe Joint Venture (RJV) to discuss proposed assembly areas for the USS-02 in JSC Building 10. A preferred layout, developed by LM engineers, was provided to RJV for review and consideration. RJV is incorporating the layout requirements into the reorganization of Building 10 shop areas.
- Vacuum Case Milestones
 - First Article Conical Flange Complete - July 2004
 - Weld Fixture Complete - August 2004
 - STA Support Rings Complete - August 2004
 - Weld Development Complete - August 2004
 - STA Conical Flanges Complete - August 2004
 - Shipping Fixture Complete - August 2004



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- STA Line Drill Operations Complete - August 2004
- Flight Support Rings Complete - September 2004
- First Article Weld Complete - September 2004
- Flight Conical Flanges Complete - September 2004
- STA Match Drill Procedure Complete - September 2004
- STA Weld Complete (for proof test @ STADCO) - September 2004